

Amendments to the Claims:

A clean version of the entire set of pending claims (including amendments to the claims, if any) is submitted herewith per 37 CFR 1.121(c)(3). This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Canceled)

2. (Currently amended) The A method of claim 1 to provide color temperature correction in emission spectra of a phosphor converted LED under PWM current drive, the method comprising:

determining a modulation for a driving current signal;

modulating a constant magnitude current signal based on the determined modulation; and

applying the modulated current signal to cause a color temperature correction in the emission spectra of the LED.

wherein determining a the current signal modulation 810 includes comprises determining a first LED 520 emission spectra color coordinate set representing LED emission spectra at a first LED operational temperature, and determining a second LED emission spectra color coordinate set wherein the first color coordinate set represents LED 520 emission spectra at a first LED 520 operational temperature and the second color coordinate set represents representing a correlated color temperature (CCT) shift in the LED 520 emission spectra due to operation of the LED 520 at a second operational temperature, the color temperature correction corresponding to the CCT shift.

3. (Currently amended) The method of claim 2, wherein the current signal modulation is determined 810 such that applying the determined current signal modulation 830 to the LED 520 causes the LED 520 emission spectra at the first

color coordinate set to be substantially constant as the LED 520 operational temperature changes from the first LED 520 operational temperature to the second LED 520 operational temperature.

4. (Currently amended) The method claim ~~[[1]]~~ 2, wherein ~~the modulation includes~~ modulating the constant magnitude current signal comprises changing the ~~current signal~~ a frequency of the current signal.

5. (Currently amended) The method of claim ~~[[1]]~~ 2, wherein ~~the modulation includes~~ modulating the constant magnitude current signal comprises changing the ~~current signal~~ a duty-cycle of the current signal.

6. (Currently amended) The method of claim 5, wherein the total light output of the LED 520 is changed responsive to the changing of the current signal duty cycle.

7. (Currently amended) The method of claim 5, wherein ~~the current signal~~ a frequency of the current signal is changed to maintain a constant total light output of the LED 520.

8. (Currently amended) The method of claim ~~[[1]]~~ 2, wherein applying the modulated current signal ~~830 includes~~ comprises selectively coupling a power supply 650 to ~~a phosphor converted~~ the LED 520 based on the determined modulation.

9. (Currently amended) The method of claim 8, wherein the LED 520 is a phosphor converted white light LED.

10. (Currently amended) The method of claim 9, wherein ~~the LED 520~~ a junction emission intensity of the LED is substantially constant while ~~the~~ a phosphor emission intensity ~~is increased~~ increases responsive to the current signal modulation.

11. (Currently amended) An apparatus to provide color temperature correction in an emission spectra of a phosphor converted LED 520, the apparatus comprising:

a phosphor converted LED; and

a color correction control circuit 600; and a coupled to the phosphor converted LED 520 coupled to the control circuit 600 wherein, the control circuit is being configured to determine a modulation 840 for an LED 520 a driving current signal of the LED, to modulate a constant magnitude current signal based on the determined modulation, 820 and to apply the modulated current signal 830 to the LED 520 to cause a color temperature correction in the an emission spectra of the LED 520,

wherein determining the current signal modulation includes determining a first color coordinate set representing LED emission spectra at a first LED operational temperature, and determining a second color coordinate set representing a correlated color temperature (CCT) shift in the LED emission spectra due to operation of the LED at a second operational temperature, the color temperature correction corresponding to the CCT shift.

12. (Currently amended) The apparatus of claim 11, wherein the color correction control circuit 600 includes comprises a constant-current magnitude pulse width modulator circuit 660 having configurable frequency and duty cycle.

13. (Currently amended) The apparatus of claim 12, wherein the color correction control circuit 600 includes further comprises a power supply 650 selectively arranged configured to selectively deliver power to the pulse width modulator circuit 660.

14. (Currently amended) The apparatus of claim 11, wherein the color correction control circuit 600 includes comprises a processor control system 670.

15. (Currently amended) The apparatus of claim 14, wherein the processor control system 670 is enabled to control the steps of:

~~—determining a configured to determine the modulation for an LED 520 the~~
driving current signal 810; ~~modulating to modulate the~~ constant magnitude current signal based on the determined modulation 820; and ~~applying to apply the~~ modulated current signal 830 to the LED 520 to cause a the color temperature correction in the emission spectra of the LED 520.

16. (Currently amended) The apparatus of claim 15, wherein ~~determining a modulation 810 includes~~

~~determining a first LED 520 emission spectra color coordinate set and a second LED 520 emission spectra color coordinate set wherein the first color coordinate set represents LED 520 emission spectra at a first LED 520 operational temperature and the second color coordinate set represents a CCT shift in the LED 520 emission spectra due to operation of the LED 520 at a second operational temperature and wherein a current signal modulation is determined 810 such that~~
applying the determined current signal modulation 830 to the LED 520 causes the LED 520 emission spectra at the first color coordinate set to be substantially constant as the LED 520 operational temperature changes from the first LED 520 operational temperature to the second LED 520 operational temperature.

17. (Currently amended) The apparatus of claim 11, wherein the LED 520 is a white light phosphor converted LED.

18. (Currently amended) The apparatus of claim 15, wherein the LED 520 is an InGaN phosphor converted white-light LED 520.

19. (Currently amended) A system to provide color temperature correction in an emission spectra of a constant current PWM driven phosphor converted white-light LED 520, the system comprising:

means for determining a driving current modulation to cause a color correction to the emission spectra 810 of the LED;

means for modulating a current signal with the determined modulation 820;

means for applying the modulated current signal to cause a color temperature correction in the emission spectra 830 of the LED,

wherein determining the current signal modulation includes determining a first color coordinate set representing LED emission spectra at a first LED operational temperature, and determining a second color coordinate set representing a correlated color temperature (CCT) shift in the LED emission spectra due to operation of the LED at a second operational temperature, the color temperature correction corresponding to the CCT shift.